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Appl. No. 10/509,085
December 7, 2007

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1.   (Currently Amended) A computer natural language translation system, comprising:

means for inputting source language text;

means for outputting target language text; ~~and~~ .

transfer means for generating said target language text from said source language text using stored translation data generated from examples of source and corresponding target language texts, the transfer means being ~~arranged to use~~ using data defining a plurality of stored translation units each consisting of a small number of ordered words and/or variables in both the source and the target language, and

development means for inputting new examples of source and corresponding target language texts, and adding new translation units based thereon, the development means being arranged:

to ~~apply~~ applying said stored translation data to a new example of source and corresponding target language texts, to generate for each at least one analysis comprising analysis data indicating the dependencies of words therein;

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~~to calculate~~calculating, for each one of a plurality of source words in the source language text, a measure of affinity between each word in the target language text and each such source language word;

~~to pair~~pairing source language words with target language words on the basis of the measures thus calculated~~, and~~;

rejecting pairs of source language words and target language words in the event that such pairs would result in it not being possible to decompose the source and target language texts into translation units which can be used for translation; and

~~to form~~forming new translation units, each comprising a ~~said~~remaining paired word and those words and/or variables in both the source and the target language analyses which depend upon it.

2.   (Currently Amended) A system according to claim 1, in which the development means ~~is arranged to be capable of generating~~generates a plurality of said analyses in at least one of the source and target language, and ~~to~~ selects one pair of analyses from which to form said new translation units.

3.   (Currently Amended) A system according to claim 2, in which the development means ~~is arranged~~ to jointly selects the pair of analyses and the pairing of said source and target words.

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4.   (Previously Presented) A system according to claim 1, in which said

analysis data represents, or can be converted into, a tree structure indicating the

dependencies of words therein.

5.   (Currently Amended) A system according to claim 1, in which the

development means ~~is arranged to~~ performs said analyses using the stored translation

units.

6.   (Currently Amended) A system according to claim 1, in which the

development means ~~is arranged to~~ calculates said measures of affinity using the stored

translation units.

7.   (Currently Amended) A system according to claim 1, in which the

development means ~~is arranged to~~ calculates said measures of affinity using a lexicon

database through which translations in said source and target languages can be identified.

8.   (Currently Amended) A system according to claim 1, in which the

development means ~~is arranged to~~ calculates said measures of affinity using semantic

and/or syntactic analysis.

9.   (Previously Presented) A system according to claim 1, wherein the

measure of affinity is a measure of the probability that each word in the target language

text is a translation of each respective source language word.

10.   (Currently Amended) A system according to claim 1, in which the

development means ~~is arranged to~~ performs said pairing in order of probability of

correspondence from the highest probability, using said measures of probability.

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11.   (Currently Amended) A system according to claim 10, in which, after each said pairing, the development means~~is arranged to~~ performs a word order analysis and to reject future pairings which would violate a word order criterion.

12.   (Currently Amended) A method of obtaining new translation units for a computer translation system, from examples of source and corresponding target language texts, said method comprising:

analysing the texts to obtain dependency relationships between language units thereof;

matching words of one text against all those of the other, to generate scores;

pairing words of the respective texts using said scores;

rejecting pairs of source language words and target language words in the event that such pairs would result in it not being possible to decompose the source and target language texts into translation units which can be used for translation; and

providing new translation units using the paired words, and language units in each of the languages derived from the analyses.

13.   (Currently Amended) A computer natural language translation system, comprising:

means for inputting source language text;

means for outputting target language text;

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transfer means for generating said target language text from said source language
text using stored translation data generated from examples of source and corresponding
target language texts,

~~characterised in that~~wherein said stored translation data comprises a plurality of
translation components, each comprising:

surface data representative of the order of occurrence of language units in
said component;

dependency data related to the semantic relationship between language
units in said component~~; and~~, the dependency data of language components of said
source language being aligned with corresponding dependency data of language
components of said target language~~;~~; and

~~and in that~~ said transfer means ~~is arranged to~~ uses said surface data of said source
language in analysing the source language text, and said surface data of said target
language in generating said target language text, and said dependency data in
transforming the analysis of said source text into an analysis for said target language

said transfer means including means for rejecting pairs of source language words
and target language words in the event that such pairs would result in it not being
possible to decompose the source and target language texts into translatin units which can
be used for translation.

14.   (Currently Amended) A computer language translation development
system, for developing data for use in translation, said system comprising:

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linking means for allowingwhich links (a) corresponding source and (b) target

example texts to be linked into source and target language dependency graphs;

aligning means for allowingwhich aligns (a) corresponding translatable nodes of

said source and target language dependency graphs representing translatable parts of the

source and (b) target texts to be aligned;

said aligning means includes means for rejecting pairs of source language words

and target language words in the event that such pairs would result in it not being

possible to decompose the source and target language texts into translation units which

can be used for translation; and

means for automatically generating, from said source and target language

dependency graphs, respective associated surface representative graph having a tree

structure.

15.   (Currently Amended) A computer program comprisingstore containing

computer program code to executeexecutable on a computer to cause said computer to act

as the system of claim 1.

16.   (Currently Amended) Apparatus for inferring new translation units which

will allow a given source text to translate as a given target text, said apparatus

comprising:

a database of translation units;

means arranged to analysefor analyzing both the source text and the target text

into one or more alternative representations using these units;

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means ~~arranged to indicate and score~~for indicating and scoring lexical alignments

between the source and target texts;

means ~~arranged to select~~for selecting one of the alternative source analyses and

one of the alternative target analyses based on the scored alignments; and

means ~~arranged to infer~~for inferring one or more translation units based on the

selected source analysis, the target analysis and the alignment, said means for inferring

including means for rejecting pairs of source language words and target language words

in the event that such pairs would result in it not being possible to decompose the source

and target language texts into translation units which can be used for translation.

17.   (Original) Apparatus according to claim 16 wherein said alternative

representations are tree representations or representations that can be converted into tree

representations.

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